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Based upon the above discussion and illustrations, those skilled in the art will readily recognize that various modifications and changes may be made to the present disclosure without strictly following the exemplary embodiments and applications illustrated and described herein. Such modifications and changes may include, for example, incorporating one or more aspects described in the above references and/or applying one or more embodiments thereto, or combining embodiments. Other changes may include using subcomponents having energy that is more associated with noise than with a desired signal, such as for applications in which a lower quality or resolution may be in order. These and other modifications do not depart from the true spirit and scope of the present disclosure, including that set forth in the following claims.

What is claimed is:

1. A method for identifying a QRS complex in an electrocardiogram (ECG), the method comprising:
- decomposing the ECG into subcomponents;
- selecting a subset of the subcomponents based upon a degree of overlap of spectral energy, in at least one of the subcomponents, with expected spectral energy of the QRS complex of the ECG;
- combining at least two of the subcomponents in the subset;
- comparing the combined subcomponents to a threshold; and
- identifying the location of the QRS complex in the ECG based on the comparing.

2. The method of claim **1**, further comprising computing the threshold based upon an estimated level of noise energy in an isoelectric portion of the ECG.

3. The method of claim **2**, further comprising estimating the level of noise energy using one of variance, zero crossings, and amplitudes of peaks and valleys in the ECG.

4. The method of claim **1**, further including computing the threshold by:
- selecting a subset of noise subcomponents based upon a portion of subcomponent spectral energy attributable to expected noise spectral energy in the ECG;
- combining at least two of the noise subcomponents; and
- setting the threshold based upon the combination of the at least two of the noise subcomponents.

5. The method of claim **4**, wherein selecting a subset of noise subcomponents based upon a portion of subcomponent spectral energy attributable to expected noise spectral energy in the ECG includes selecting a subset of noise subcomponents based upon a portion of subcomponent spectral energy attributable to expected noise spectral energy in a portion of the ECG that excludes the QRS complex.

6. The method of claim **4** wherein combining at least two of the noise subcomponents includes combining noise subcomponents of a portion of the ECG outside the QRS complex.

7. The method of claim **4**, wherein the portion of subcomponent spectral energy attributable to noise spectral energy is at least one-half of the total energy of the subcomponent.

8. The method of claim **4**, wherein combining at least two of the noise subcomponents includes computing one of a point-wise product of the at least two of the noise subcomponents, a linear combination of the at least two of the noise subcomponents, and a cross-correlation of the at least two of the noise subcomponents.

9. The method of claim **1**, wherein combining includes computing one of a point-wise product of the at least two of the subcomponents, a linear combination of the at least two of the subcomponents, and a cross-correlation of the at least two of the subcomponents.

10. The method of claim **1**, wherein decomposing the ECG into subcomponents includes generating time-synchronized subcomponents.

11. The method of claim **10**, wherein generating time-synchronized subcomponents includes applying a transform to the ECG, the transform including one of: a non-orthogonal wavelet transform, an undecimated wavelet transform, a stationary wavelet transform, and a shift-invariant wavelet transform.

12. The method of claim **1**, wherein the degree of overlap of the spectral energy, of the at least one of the subcomponents, with the spectral energy of the QRS complex of the ECG, is at least one-half.